LARGE-FLOWERED DOGWOOD (CORNUS NUTTALLII).

This is an excerpt from pages 146-151 of; **British Columbia, Its History, People, Commerce, Industries and Resources**.
Compiled by Henry J. Boam; Edited by Ashley G. Brown.; Publisher: Sells Ltd., London, England. 1912. [Internet Archive copy]

THE BOTANICAL ASPECT OF THE PROVINCE

By John Davidson, F.B.S.E., Botanist to the Provincial Government of British Columbia

BRITISH COLUMBIA presents an ideal held for the study of botany in its various phases. Fossil botany is well represented by the coal-beds in numerous parts of the Province, and, no doubt, as these are opened up and examined many interesting fossils will be brought to light.

Near Vancouver City there are tertiary deposits in which many fossils — some new to science — have actually been found. Sir William Dawson named two of these, Carex vancouverensis and C. burrardiana, and it is probable that many others await the labours of the enthusiastic palæontologist.
The Marine Algae are well represented, though by no means too prolific, probably on account of there being so much deep water along the coast.

Of the Phæophyceae, Fucus evanescens and F. inflatus seem most common, associated with such members of the Chlorophyceæas Ulva and Enteromorpha. One of the most conspicuous brown algae of the North-west Pacific is Nereocystis Luctkeana, which is frequently found in large detached masses floating on the sea near the coast. The stalks, often many yards in length, end in a large more or less pear-shaped air-bladder, from the top of which the large brown, strap-like thallus-lobes arise. Specimens get washed ashore and are often collected by picnic parties, who dry them in the sun as mementoes of their visit to the seaside.

The freshwater algæ seem to be everywhere; nearly every pool, swamp, creek, and lake offers something of interest to the algologist. The tree trunks, even the electric poles in the cities, become green with Pleurococcus and other lower plants which find the warm precipitation in the spring favourable for their development.

He who prefers to study the various kinds of fungi will find British Columbia a rich field. The casual observer halts to admire the beauty and variety of form exhibited in many of the Myxomycetes (Slime Fungi), and Discomycetes in their varying hues of yellow, red, and violet to velvety black, and the presence of so many decaying logs in the forests encourages the growth of many kinds of Agaricineæ (Mushrooms and Toadstools) whose rhizomorphs may easily be traced for many feet just under the bark.

Many other Basidiomycetes, including such as Polyporus, Nidularia, and Lycoperdon, force themselves on the attention of even the most careless observer, and cause him to wonder how they develop such beauty in such mean surroundings.

So with the lichens, liverworts, mosses, and ferns, the climate — along the coast area at least — is very favourable for these, and one may frequently see examples of a tree with its trunk clothed to a considerable height with various mosses and even ferns; one particular fern, Polypodium vulgare, var. occidentale, seems to delight in having its rhizoids embedded in the moss which forms a thick coat on the upper side of a sloping tree.

Amongst the fern allies are Equisetum telmateia (Dutch Rush), E. hyemale (Giant Horsetail), often over 6 feet in height, various club-mosses, and curious little Selaginella rupestris, which abounds on the top of rocky cliffs near the coast as well as on the mountains. It may easily be mistaken for a Lycopodium, having a similar habit to the club moss.

If the lower plants, as indicated, afford scope for the botanist and lover of Nature, much more can be said of the higher or so-called "flowering" plants It would be absolutely impossible in an article such as this to convey more than an outline of the principal types of vegetation to be met with, and it is unlikely that the popular reader would find much of interest in a detailed list of the families and Latin names of several hundred flowering plants.

Even a novice cannot fail to observe that the flora is conspicuously divided off into many plants — associations which often stand out in strong contrast ; indeed, British Columbia, as far as the botany is concerned, may be called a "land of strong contrasts," strong contrasts in environment resulting in strong contrasts in the flora. The transition from moist area to dry belt is very abrupt, so also from temperate to arctic or alpine.

A large area of the Province is under a Fir and "Cedar" formation, and when a portion of this formation has been cleared, as frequently happens by fire, it is interesting to note the successive plant-associations which follow and finally prepare the way for the reception of trees again.

One of the first plants to appear over a burnt area is Epilobium angustifolium (Tall Willow-herb), which on account of its appearance soon after fire is locally called “Fireweed.” Associated with this are the common groundsel and the Pearly Everlasting (Anaphalis margaritacea), whose seeds, like those of the Fireweed, are carried by wind.

The next succession is a profusion of Rubus ursinus (a creeping bramble) and Berberis nervosa (Oregon grape) associated with Gaultheria shallon (Salal), Cornus canadensis, Linnæa borealis, var. longiflora, plants whose seeds have been dropped by birds who feed on their fruits, except in the case of Linnæa, whose fruits adhere to the legs of birds, &c., by viscid glands produced on the calyx which envelops the fruit. With these perennial, more or less evergreen, plants established, sufficient shelter and protection is afforded too many herbaceous plants such as Claytonia of several species, Maianthemum dilatatum, and Tiarella trifoliata, which seem to prefer partial shade during the hot, dry season.

Then follows an association of Rubus nutkanus (Thimbleberry), R. spectabilis (Salmonberry), Vaccinium parvifolium (Red Huckleberry), Rosa gymnocarpa, &c., all through the agency of birds.

After this stage much depends on the physical conditions, whether moist or dry. Along streams (“creeks” in British Columbia) is found Sambucus racemosus (Red-berried Elder), and the beautiful Streptopus amplexifolius (Twisted Stalk),which in autumn presents gorgeous sprays laden with red to purple egg-shaped berries ; alder, willows, and young "cedars” (Thuja plicata) begin to appear along with Fatsia horrida (Devil's Club),while the Fireweed and other “old-timers” disappear in the struggle for existence. In the drier portions is found an association of Acer circinata (Vine Maple) and that most beautiful of all British Columbian trees, Cornus nuttallii (a large-flowered Dogwood) and several species of pine.

Of course, during these transition stages from the disappearance of one plant formation till the establishment of another various plants occur which do not belong to any specified plant-association; they are as erratic in their time of appearance as in their duration; plants such as Thistles, Clover (Trifolium repens), and various grasses, and many introduced plants behave under these conditions as if they were native.

The coast of British Columbia being mostly rugged and rocky, there are not too many opportunities for the growth of strand plants. At a few places, such as at Boundary Bay or Savary Island, &c., the coast is sandy, and various species of Elymus and other sand-binding grasses find a suitable habitat.

On Savary Island, in addition to the sand-binding grasses, is found a very conspicuous sedge (Carex macrocephala); in habit it resembles Carex arenaria, but, as the name implies, it has an enormous and characteristic flowering head. Here, too, where there is a great stretch of shallow water one can find a prolific growth of Zostera marina (Grass Wrack), a plant which actually flowers under the surface of the sea.

Other characteristic plants, such as Salicornia ambigua (often with Cuscuta parasitic on it), and Arenaria peploides, &c., are frequently found along the sandy seashores.

In bogs and freshwater marshes many of the herbaceous plants are similar to those found in British marshes; such plants as Parnassia palustris, Comarum palustre, Drosera rotundifolia, Mimulus langsdorfii, Menyanthes trifoliata, Typha latifolia, Veronica scutellata Rubus chamæmorus and others are freely distributed.

Undoubtedly the most conspicuous inhabitant of marshy places in British Columbia, and particularly in the Pacific slope, is the Yellow Arum or “Western skunk cabbage,” Lysichiton camtschatcensis, a very different plant from the American “skunk cabbage” (Symplocarpus fætidus). Its bright yellow spathe, from 1 to over 2 feet in length, surrounding a conspicuous green spadix, is quite attractive in spring, and but for the disagreeable odour it emits when injured, would no doubt become a popular horticultural specimen. It prefers wet soil, rich in organic matter, in the shade of woods, and is very susceptible to any change in its environment; complete specimens a few inches in height may be met with soon after the commencement of draining operations.

Most of the shrubs inhabiting bogs are different from those of the Old Country.

These include Spiræa Douglasi, with its erect pink racemes, Ledum latifolium(Labrador tea), with showy white corymbs, and that gem of bogshrubs, Kalmia glauca, with its cluster of saucer-shaped flowers of a delicate waxy pink, and whose leaves are a shining green on the upper surface like miniature Rhododendrons, while the under surface is glaucous white.

It is useless to attempt to name all the attractive and showy herbaceous plants, but several of outstanding beauty are worthy of mention.

Of the orchids, there are Calypso bulbosa, Cypripedium parviflorum and C. montanum, while of the lily family there are Lilium columbianum, Fritillaria lanceolata,four kinds of Erythronium, held by some botanists to be four distinct species, while other botanists reduce them to three or even two species, looking on two as mere varieties.

In some places Camassia esculenta (Lindley), the Indian Camass, is so prolific as to form a sea of blue on the pasture, especially round Victoria, while the larger species — a good garden plant — is by no means rare. Sometimes there is great competition between the Camass and Ranunculus occidentalis in their efforts to produce the greatest blaze of colour; the latter, whose flowers are bright and yellow, contrasts strongly with the various shades of blue exhibited in the former. In other places, as in the Goldstream district of Vancouver Island, Dodecatheon latifolia (the Shooting Star), allied to the Primrose, gives a pink hue to the foreground, while in the neighbourhood of Vancouver in the early summer Cornus Canadensis and Linnæa borealis cover the ground with a carpet of white flowers.

Delphinium (Larkspur), Aquilegia Formosa (Columbine), and several other familiar garden plants in Great Britain are here found as natives of British Columbia. But British Columbia is pre-eminently a land of flowering; trees and shrubs, a much greater variety being found here than in the Old Country.

In this respect there is much to interest the horticulturist, Viburnum Opulus (Guelder Rose), several species of Clematis, Cornus nuttallii (large-flowered Dogwood), Rubus spectabilis (Salmonberry), Rubus nutkanus(Thimbleberry), Arbutus Menziesie, Amelanchier alnifolia, several species of Berberis, Schizonotus discolor, Spiræa Douglasii. kalmia glauca, Symphoricarpus (Snowberry), Ribes sanguineum (Red-flowering Currant), Roses, and Honeysuckles are all natives of British Columbia, and are but a few of the many varieties abounding in the more open places which have not been wholly occupied by members of the Coniferæ;. The Coniferæ are well represented by several species of Pinus, Picea, Abies, and Larix as well as Tsuga and Pseudotsuga, Thuja (“Cedar”), Chamæcyparis, &c.

In some parts of the Province there is an alternating series of “dry” and “moist” areas; the “dry-belt flora“is quite a characteristic one, including many plants which are not to be found in the moist regions. Two Cacti, both of them Opuntias, are natives of the British Columbia dry belt — O. polyacantha and O. fragilis (species of prickly pear).
The dry-belt area is noted for its poverty in botanical representatives, and such plants as do manage to eke out an existence on the hot, dry soils of this area are all characteristically xerophytic; those which do not store water in their tissues, like Opuntia, have means of diminishing the evaporating surface of the leaves, like the Bunchgrass, a species of Agropyron, or, on the other hand, are thickly covered with hairs and strongly scented, as illustrated by several species of Artemisia (Sagebrush).
In some places in the interior of British Columbia where practically no grass can grow Artemisia frigida constitutes the herbage and pasture for cattle-grazing, and it is said to provide good food during the winter.

Until comparatively recent years the flora has been allowed to develop practically unmolested by man and there is no doubt that this accounts largely for the wealth and variety of forms which at present exist in the Province. But the spreading of railways and other transportation facilities throughout the country has been responsible for many changes in the flora. Settlers take up farms, and in doing so woodland is cleared of all timber, swampland is drained and graded, depriving many plants of their former shade and moisture ; consequently the suddenly altered environment results in the extinction of many plants in that locality.

In addition to this, weeds of cultivation, having been imported as impurities in seed supplies, find their way into the environments of native plants, setting up keener competition amongst them for a livelihood and often proving a serious menace to the welfare of the native flora.

This is most conspicuous in the vicinity of new towns and nowhere better illustrated than around the city of Vancouver, on account of the recent leaps and bounds by which that city has grown.

The city, a few years ago, was surrounded by dense woodland with several swamps or bogs. Miles of this have been cleared and are still being cleared to make room for the rapid ingress of man and the resulting demand for home sites. Hardly a trace can be found of the native plants which inhabited the ground on which the city now stands, and it is impossible to distinguish places where bogs previously existed from those places which formed the habitats of plants preferring dry situations.

There are several clues which suggest the probable flora, but there are plants right in the outskirts which are not to be found within many miles of Vancouver, and in a few years these will certainly disappear.

This process of extinction invariably commences with a series of explosions — reports of which are heard at nearly all hours of the day, and nearly all the year round, resulting in the upheaval of many giant trees, or of the stumps left by loggers in previous years. These roots and stems are piled up 20, 30 or more feet high, to be ultimately demolished by fire.
At night a weird spectacle is presented when the reflection of such fires several miles distant reddens the sky, and giant flames stand out against a background of pines and cedars awaiting a similar fate.

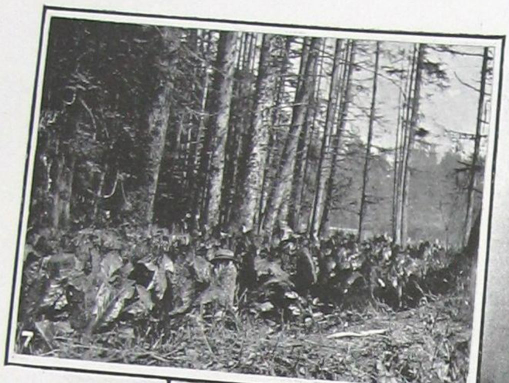
On such ground the first plant-association to establish itself is bracken, fireweed, &c., but a very interesting contrast is presented where the surface soil, which contains the rhizomes of the bracken, has been removed, as is often done when grading a road through the bush.

Here the native plants have been carefully removed and a sudden appearance of dandelion is almost certain to result; in fact, all around Vancouver this is the principal weed of cultivation, whereas Burns's “crimson-tipp'd flo'er” is almost totally absent. At New Westminster, an older city, the daisy is fairly common, and at Victoria, a still older city, it seems as prolific as it is anywhere in Great Britain; thus gradually new and strange plants, grasses, clovers, and other weeds of cultivation become the common plants around the city, while the native Flora becomes obscure.

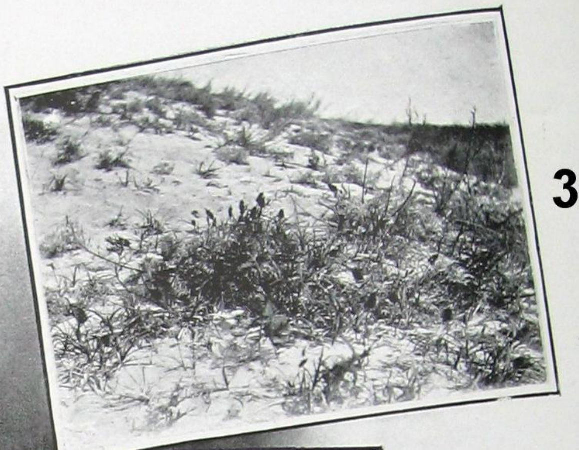
In regard to the Alpine Flora of British Columbia, much has yet to be done; Gentians, Saxifrages, Violets, Bryanthus empetriformis (False Heather), and many other plants are well known to tourists on account of their beauty, but the sedges, grasses, and many of the small and less conspicuous plants have yet to be fully investigated and their distribution throughout the Province ascertained.

As the country is more fully explored and opened up, it is very probable that new and undescribed species may be found, so that to the botanist, to the student of Nature, British Columbia offers a great field for work.

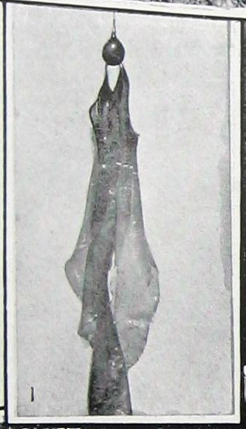
7



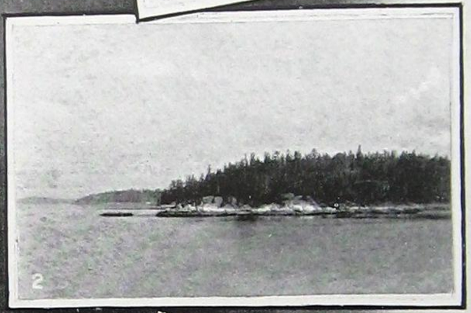
3



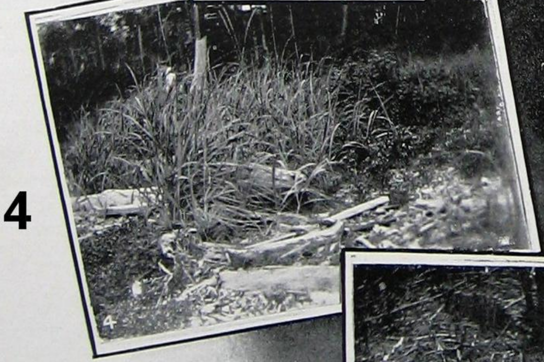
1



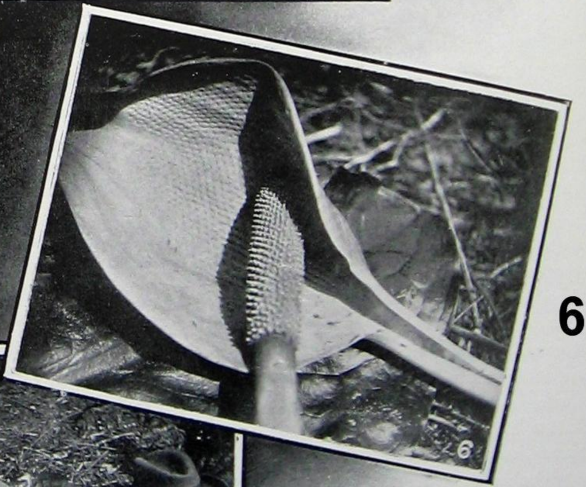
2



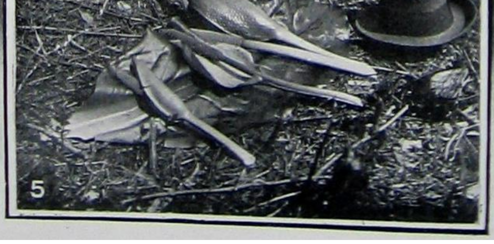
4



6



5



1. Nereocystis luctkeana (showing the pear-shaped float and the flat thallus lobes).

2: Characteristic view of the British Columbia coast north of Lund (shows the trees almost in the sea)

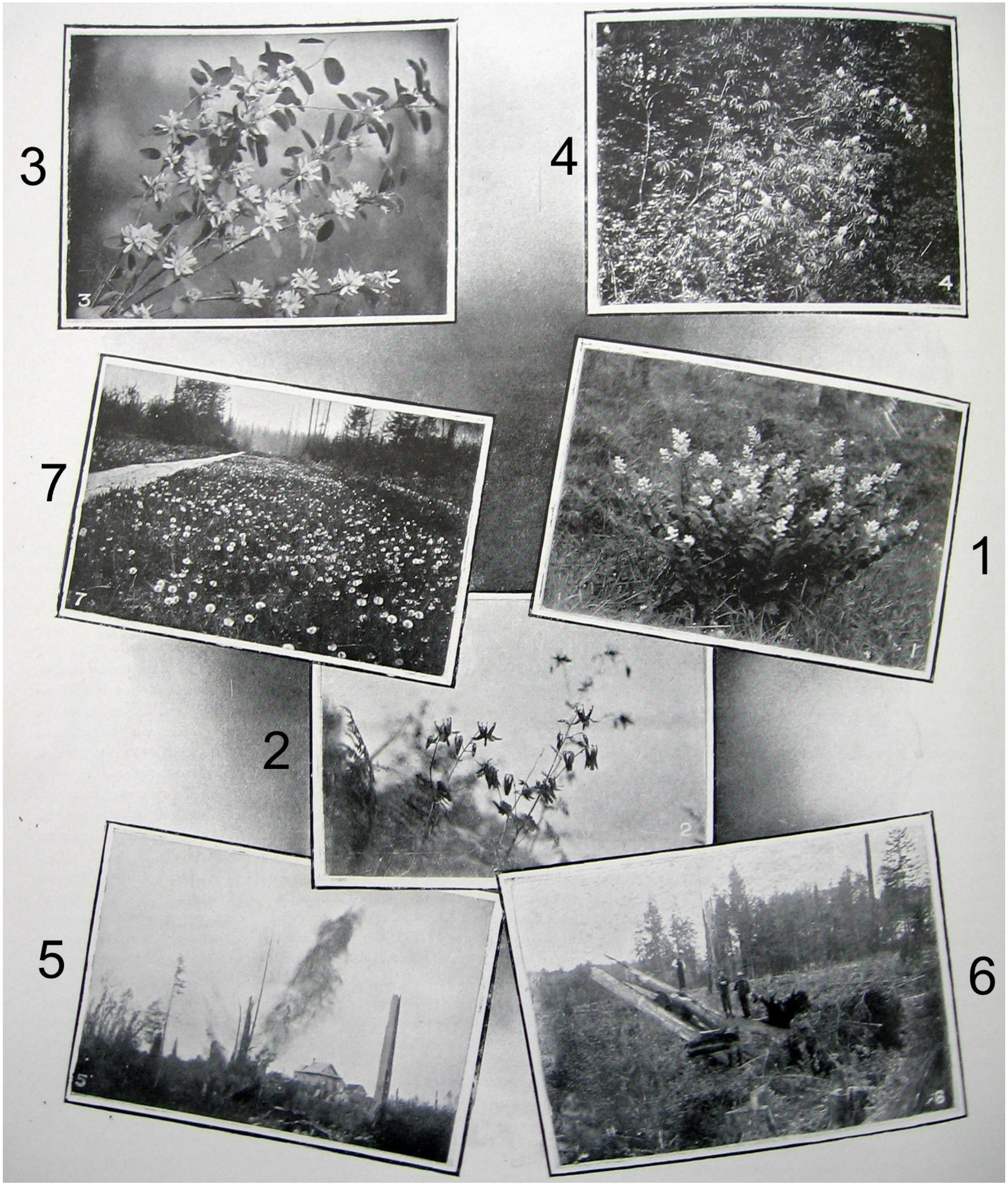
3. Carex macrocephala growing on sand dunes at Savary Island. [Larger Image]

4. A "Plant association" on the sandy shore of Savary Island (lower left corner, Arenaria peploides; centre, Elymus mollis; and on the right of it Lathyrus maritimus). [Larger Image]

5. Three flowers and a leaf of the western skunk cabbage. [Larger Image — Colour Image]

6. One spathe and spadix of Lysichiton (showing a few of the many beetles found round the base of the spadix when it was removed). [Larger colour Image]

7. A group of "Skunk cabbages" in Stanley Park (the hat in the foreground gives an idea of the size of the plants). [Larger Image — Larger colour Image (reversed)]



1. Smilacina amplexicaulis (Nutt), A natural group on Savary Island. [Larger Image]
2. Aquilegia formosa growing amongst Bracken, on bluffs by seashore. [Larger Image — Colour Image]
3. Amelanchier alnifolia. [Larger Image]
4. Sambucus racemosus. [Larger colour Image]
5. Removing tree-stumps by blasting. [Larger Image]
6. The same tree after the blast. [Larger Image]
7. Dandelions succeed native plants on cleared ground. (The effect of clearing off native plants). [Larger Image]

Scanned, transcribed and hyper-linked by; Niall A.Williams.   Learn more about John Davidson, aka “Botany John”